DB as a Service

VMware vCloud Automation Center

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1. Introduction

VMware vCloud Automation Center is an innovative self-service provisioning and lifecycle management solution that simplifies and automate deployments of infrastructure, multi-tier applications, desktop... and now any kind of IT service! It provides a secure portal where authorized administrators, developers or business users can request new IT services as well as manage specific cloud and IT resources based on their roles and privileges.

This solution provides automated installation and configuration for SQL Server 2012 service as a DB service. The solution utilizes industry's leading Cloud-enabled self-service provisioning solution, VMware vCloud Automation Center.

DB as a Service provisions database resources automatically based on available system resources, allowing application developers, architects, testers, and other consumers of databases to store and retrieve data without having to deal with lower-level database administration functionality. DBaaS helps make DBAs more productive by repurposing existing hardware resources, automating administration tasks, and facilitating a common policy framework across databases.

2. System Pre-requisites

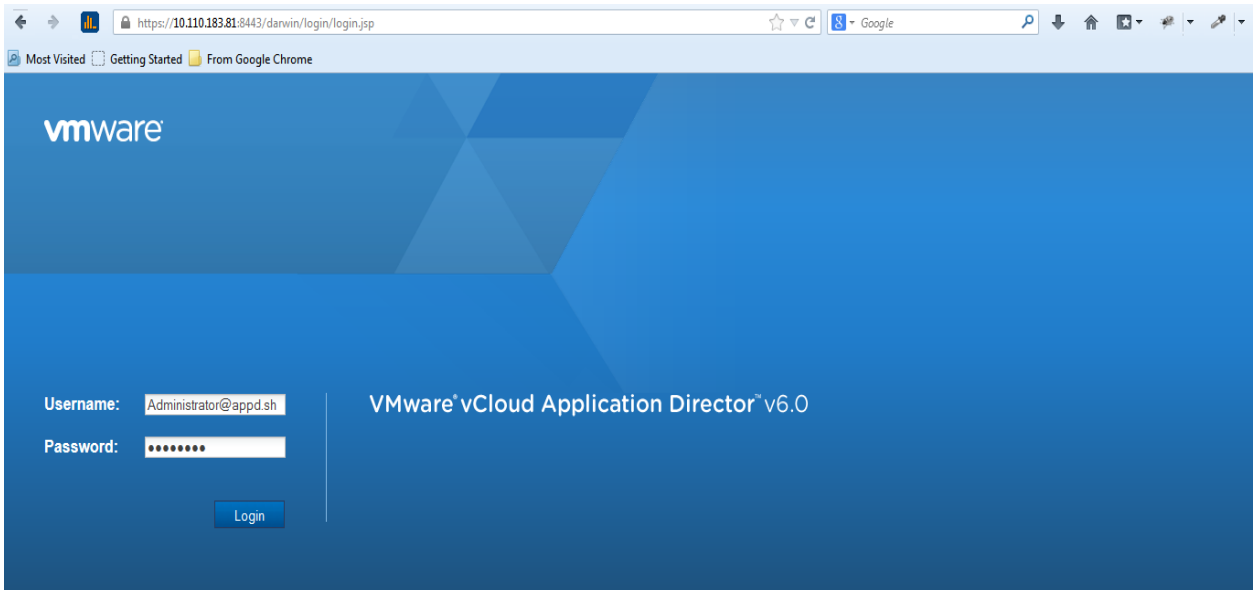
1. Install and configure VMware vFabric Application Director 6.0 with vCloud Automation Center (vCAC) 6.0. Refer the the product documentation for information about installing and configuring Application Director.
2. **SQL Server 2012** to be available as an application in the Application Director Applications.

3. Set up

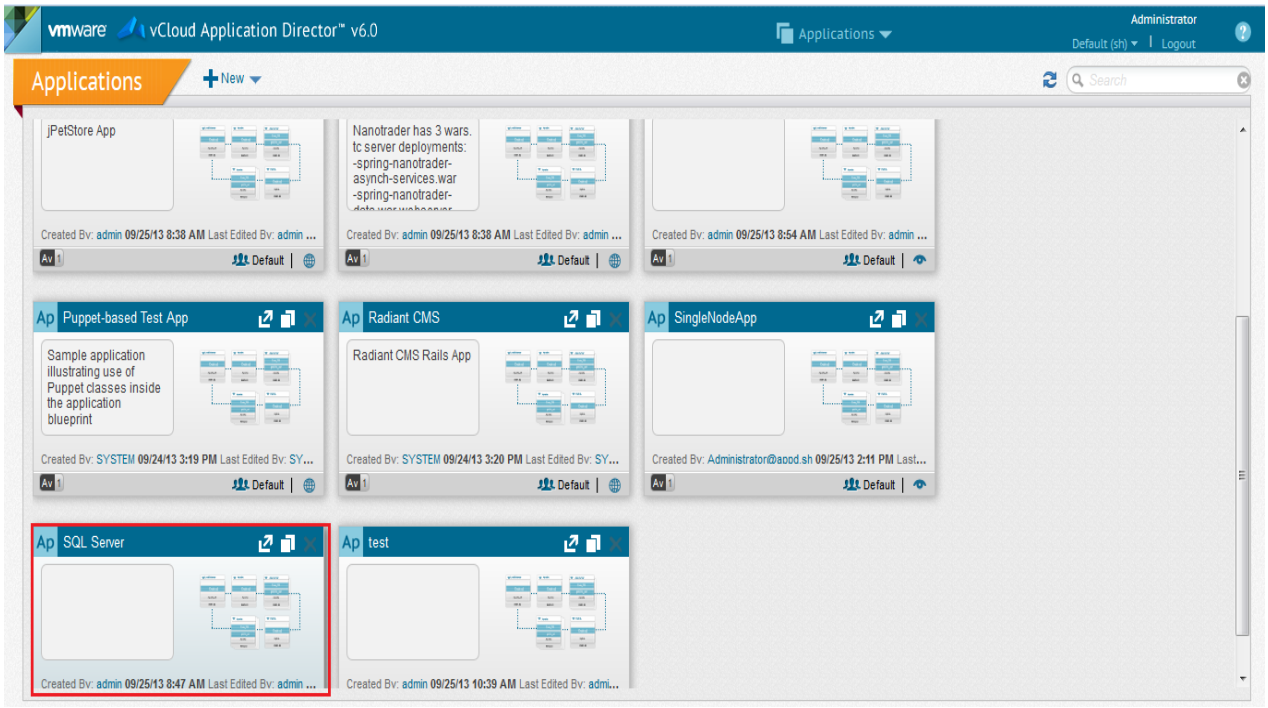
Follow the below steps to publish SQL server as a DBaas In vCAC 6.0:

3.1 Publishing an App from Application director to the Service Catalog of vCAC.

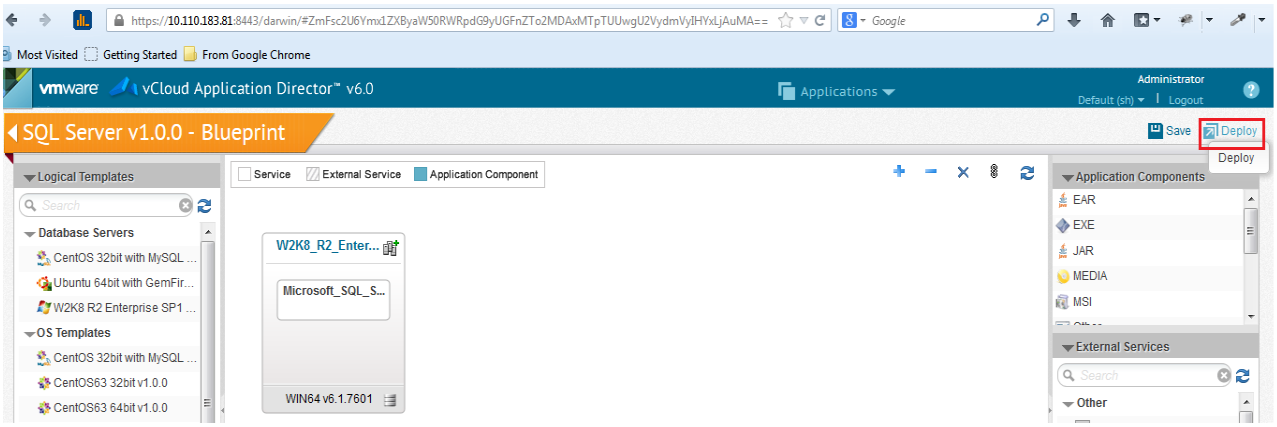
1. Login to the Application Director v6.0 instance of the setup created.

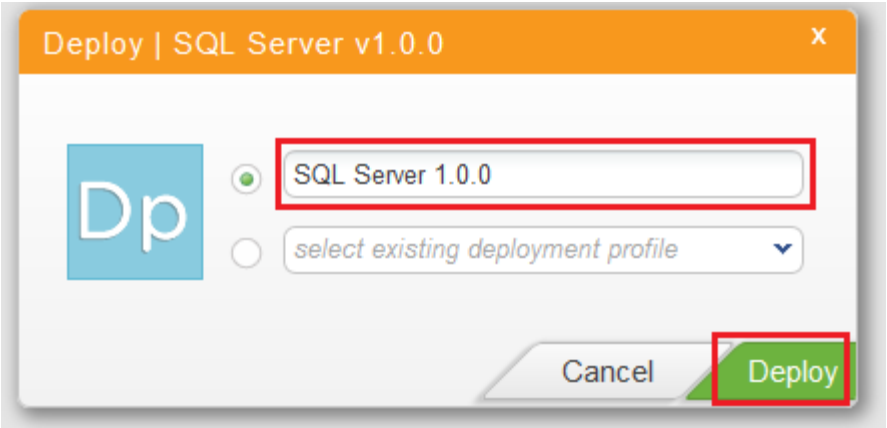


2. Now navigate to **Applications** from the main menu and select **SQL Server** App and then select view blueprint. This will navigate to the blueprint canvas and click **view blueprint** as shown

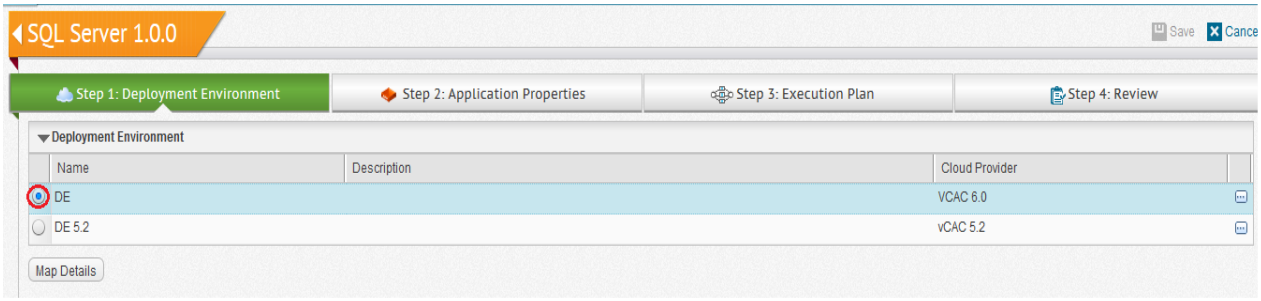


3. Now click on the **Deploy** icon as shown and enter a new name for the Deployment Profile e.g. “SQL Server 1.0.0” and then click **Deploy**

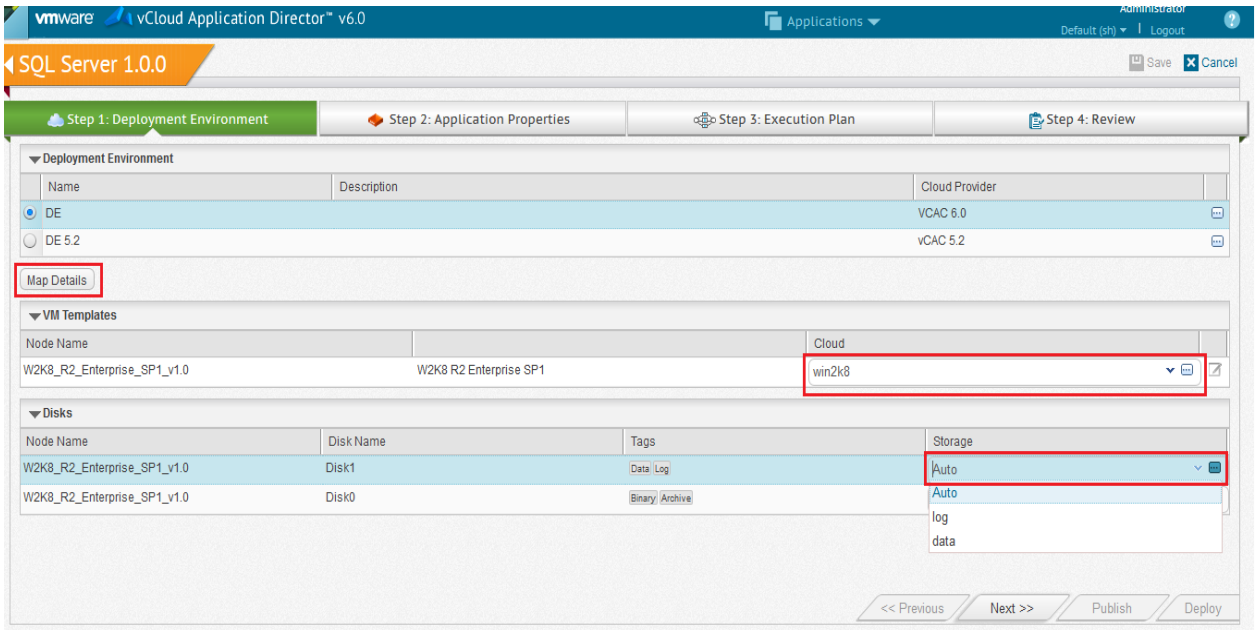




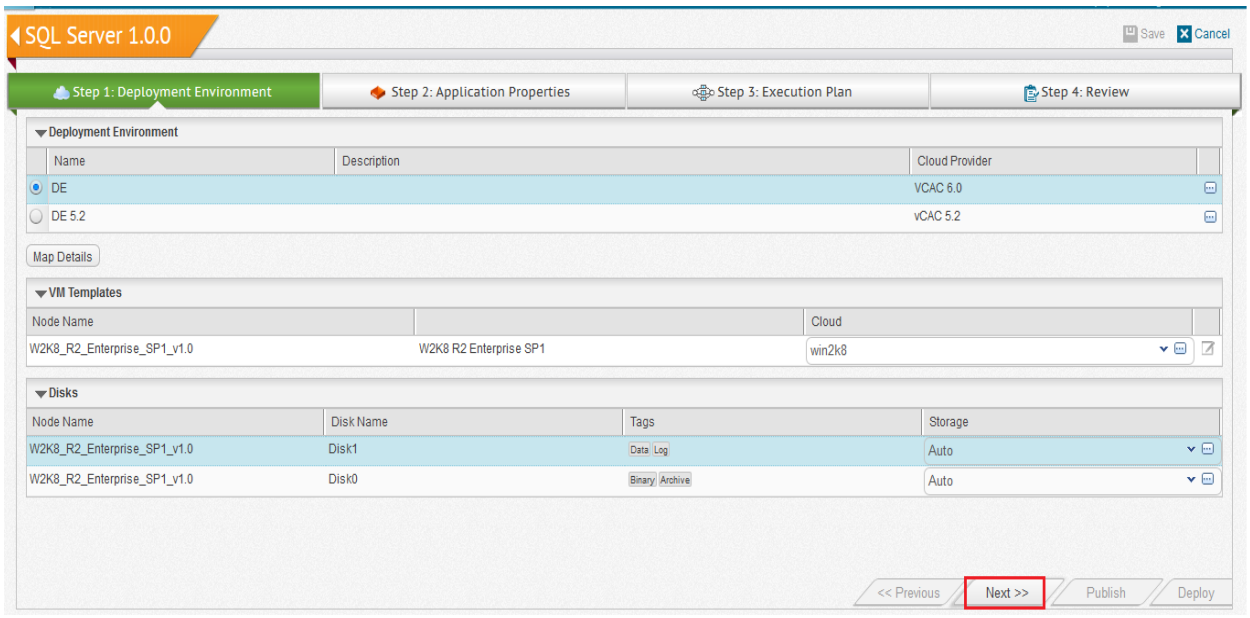
4. This will bring up the deployment wizard. Select the only available Deployment Environment



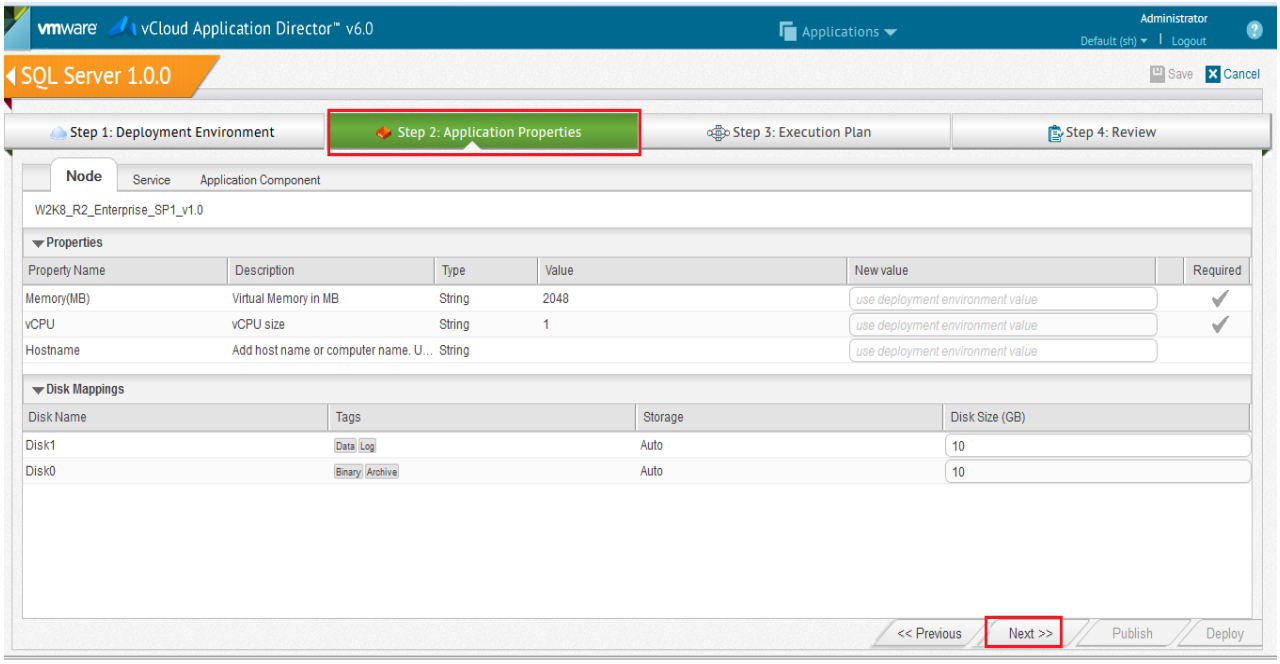
5. Click on the "**Map Details**" button and select the appropriate **Cloud & Storage template** from the drop down list



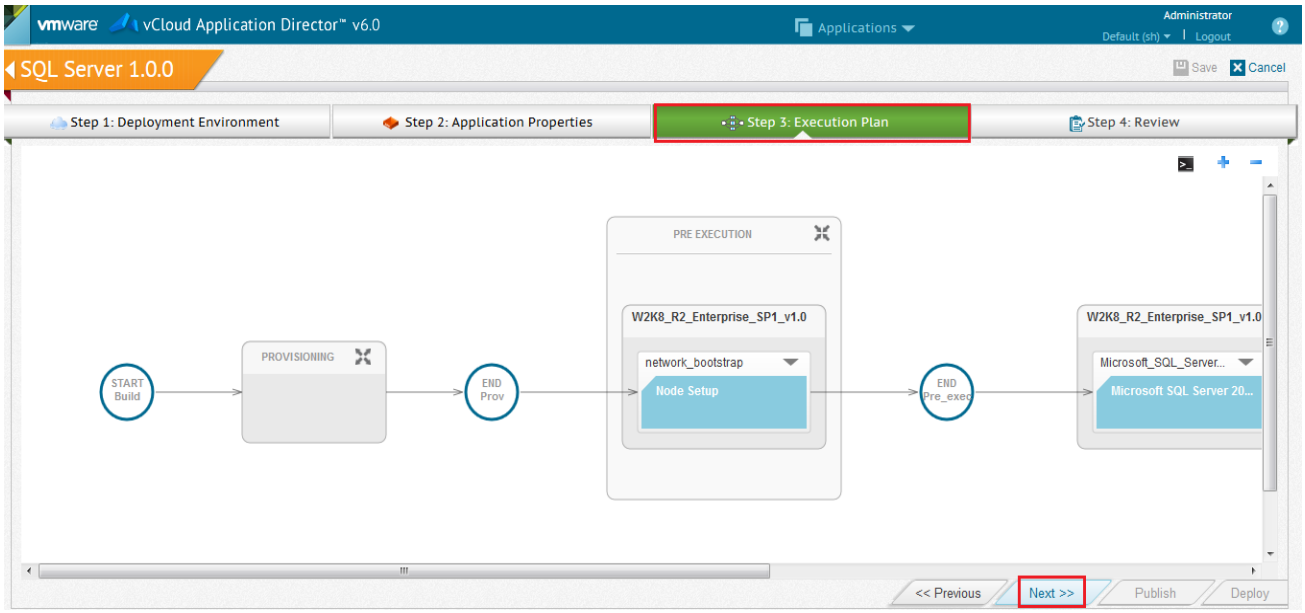
6. Now review the **Cloud Templates** (i.e. the vSphere Machine Blueprints) that will be used for this deployment and then click **Next** to review the Application Properties.



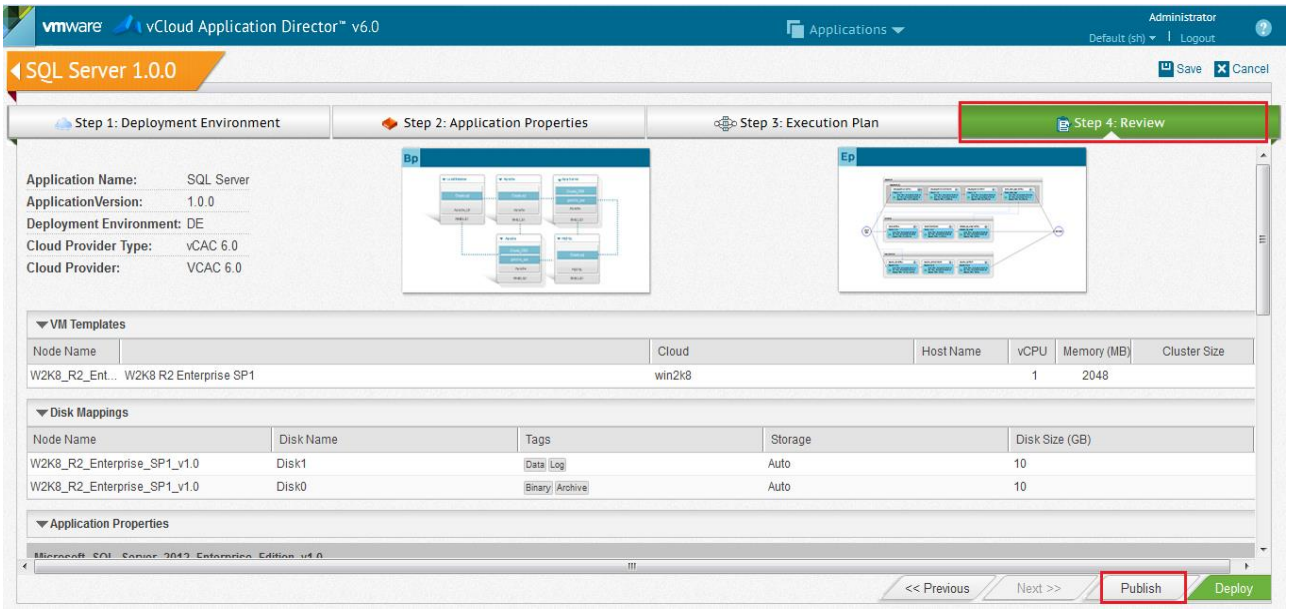
7. Review the Application Properties and then click Next to review the execution Plan



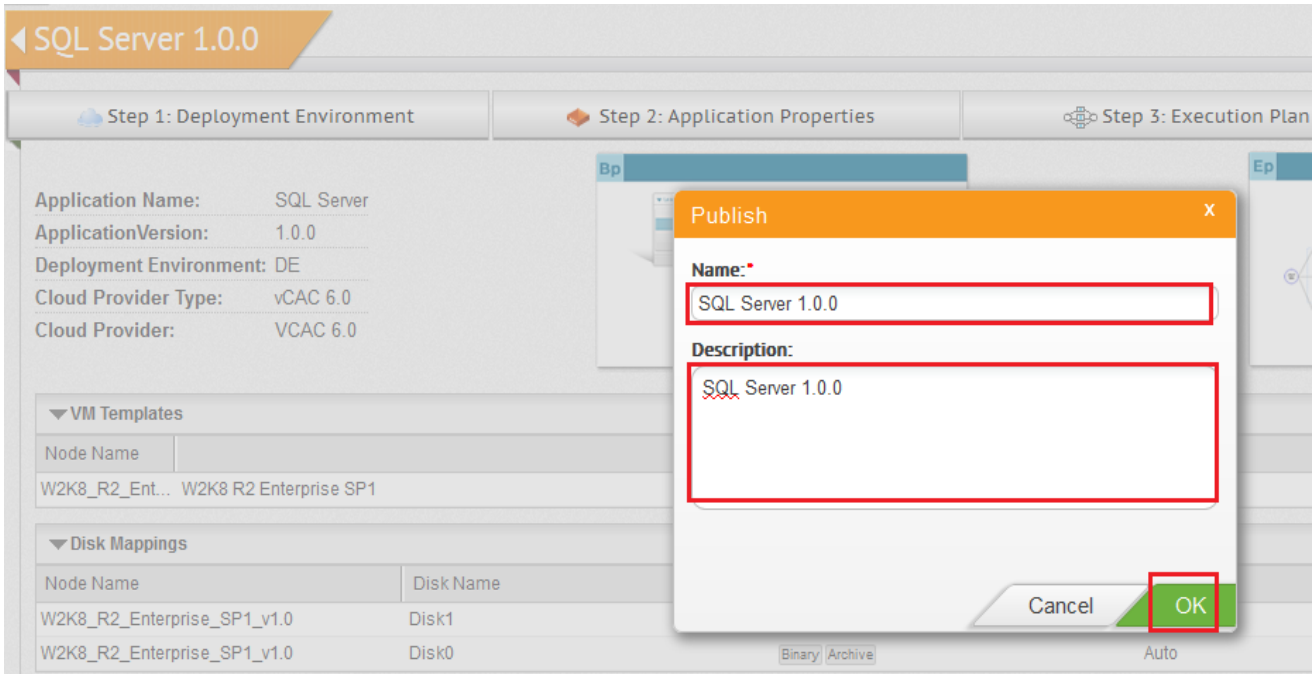
8. Review the **Execution Plan**, which provides you with a visualization of all the steps involved in provisioning the VM's as well as installing, configuring, and starting the software services. You can add custom Tasks on this view as well. Click **Next**.



9. Review the last page that summarizes all the information for this application deployment. Click on **Publish** to go ahead and publish this Deployment Profile to the Service Catalog into vCAC

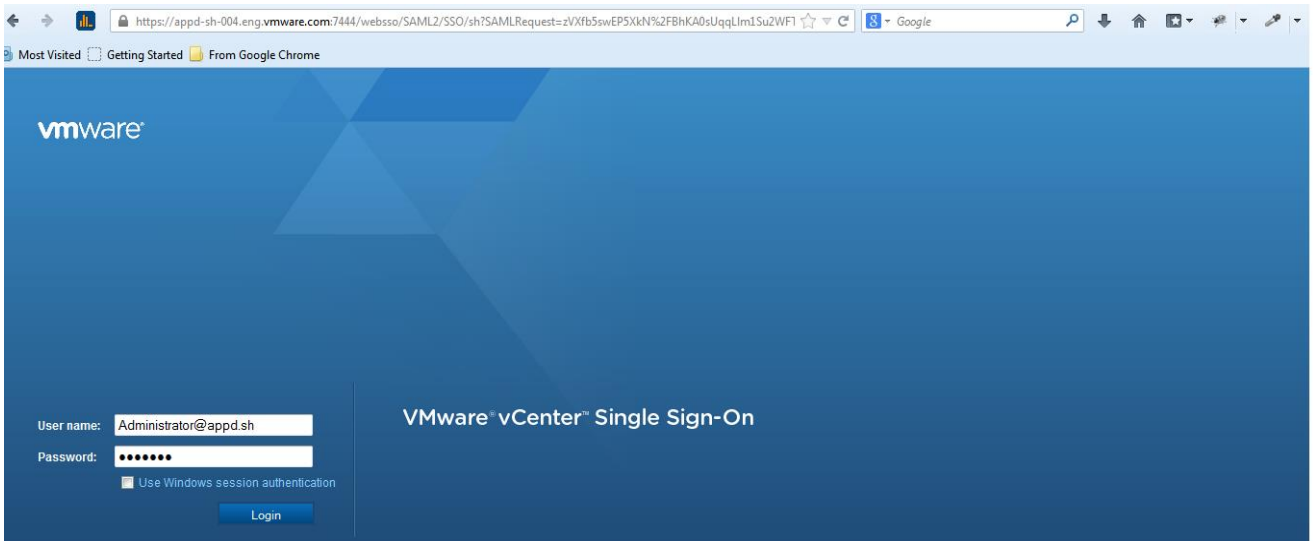


10. Provide a name and description and then click **OK** to publish

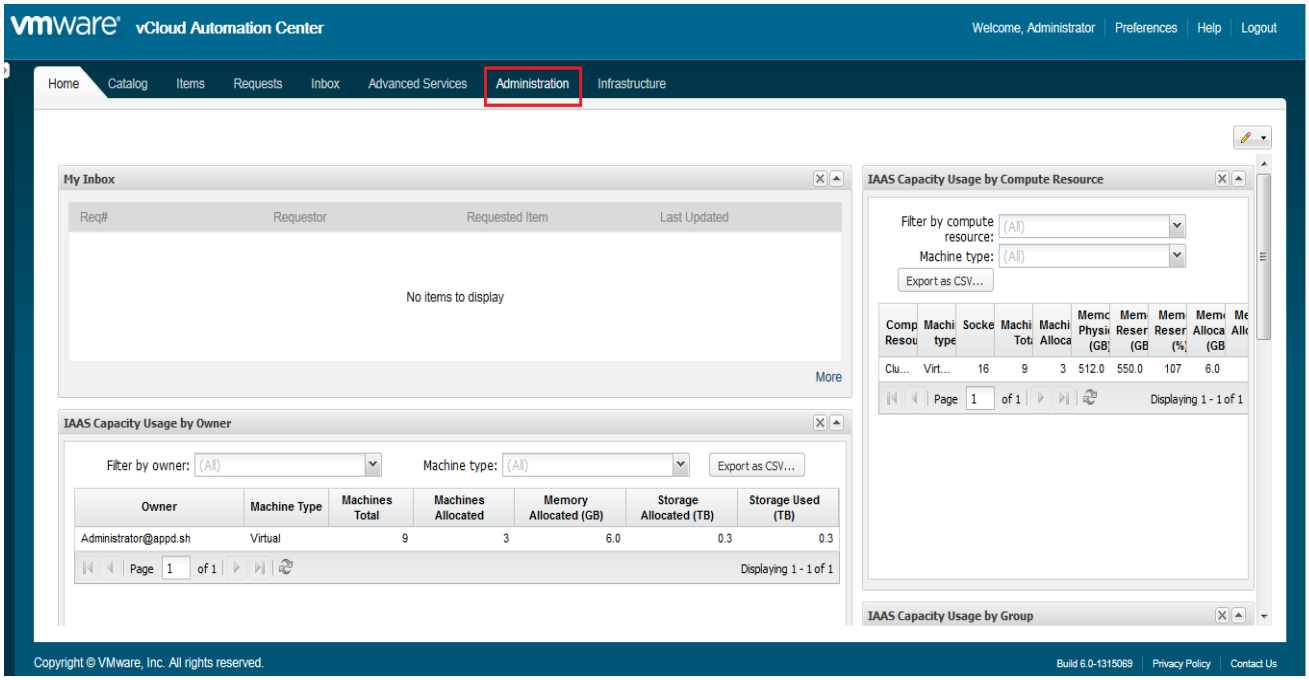


3.2 Managing Entitlements of the Newly Published Application

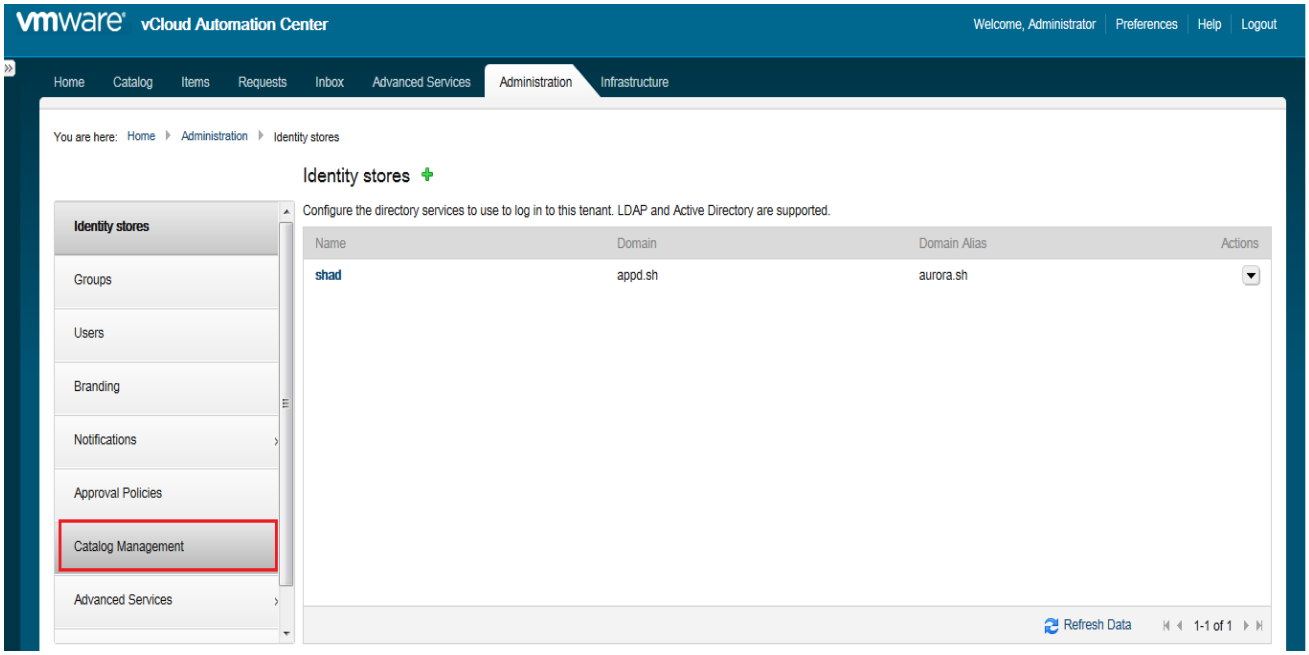
1. Login to the vCAC v6.0 https://appd-sh-006.eng.vmware.com/shell-ui-app/org/sh as Administrator@appd.sh/ca$hc0w1 using SSO



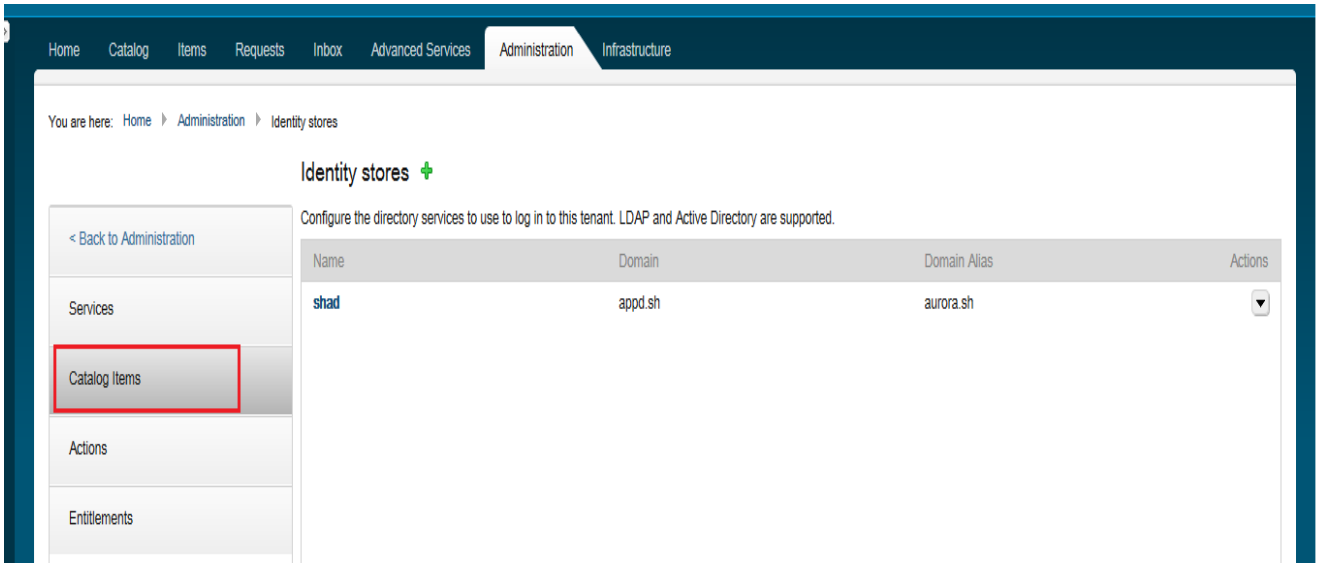
2. Click on the **Administration** tab



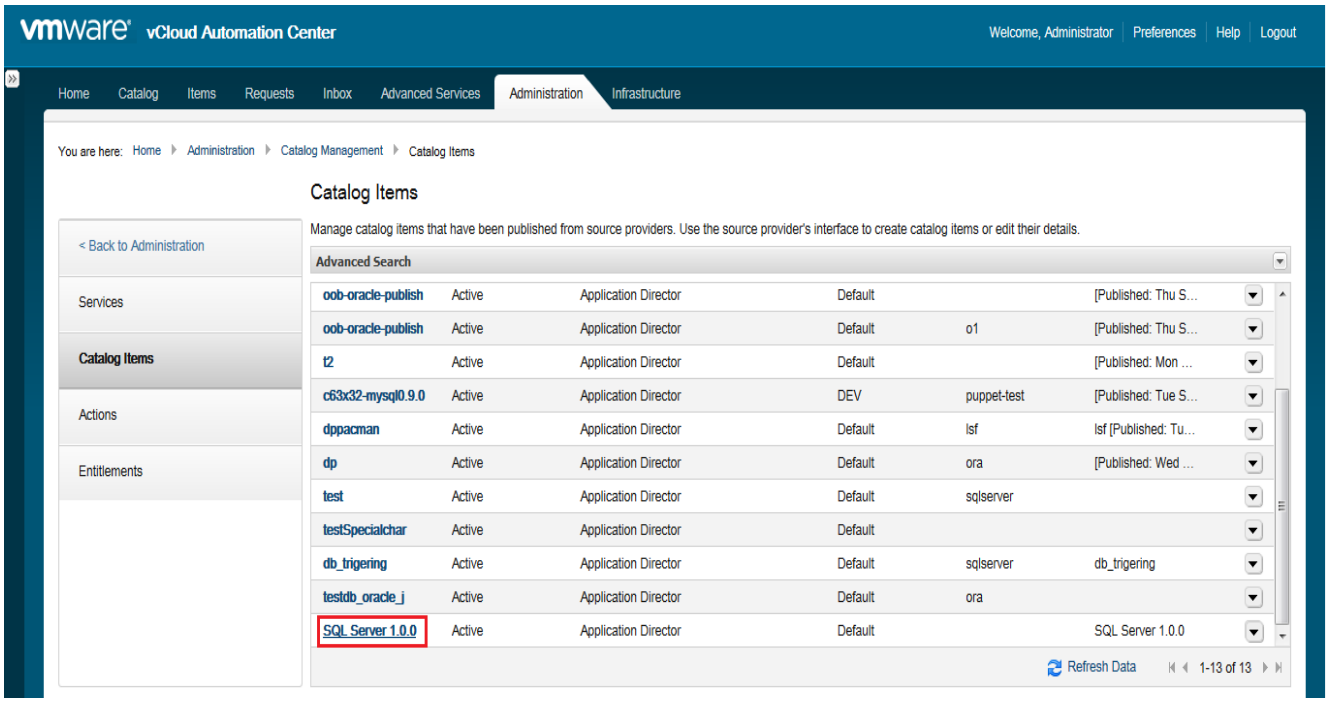
3. Select **Catalog Management**



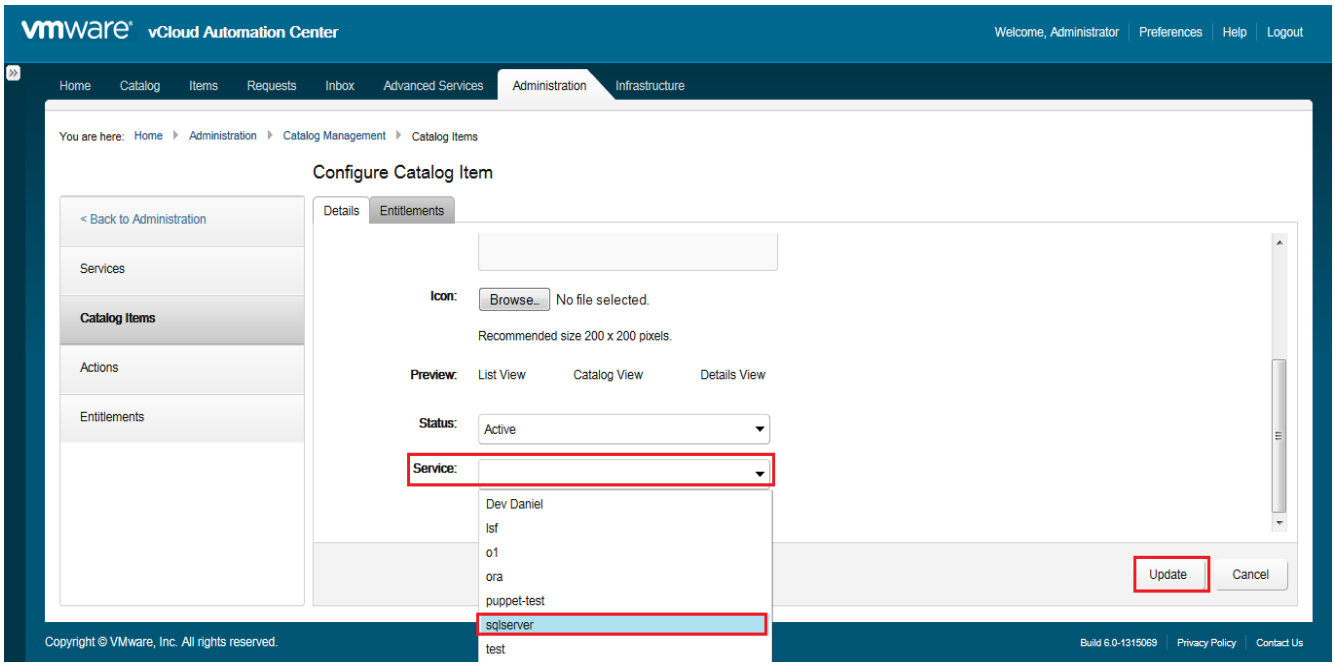
4. Click on to **Catalog Items**



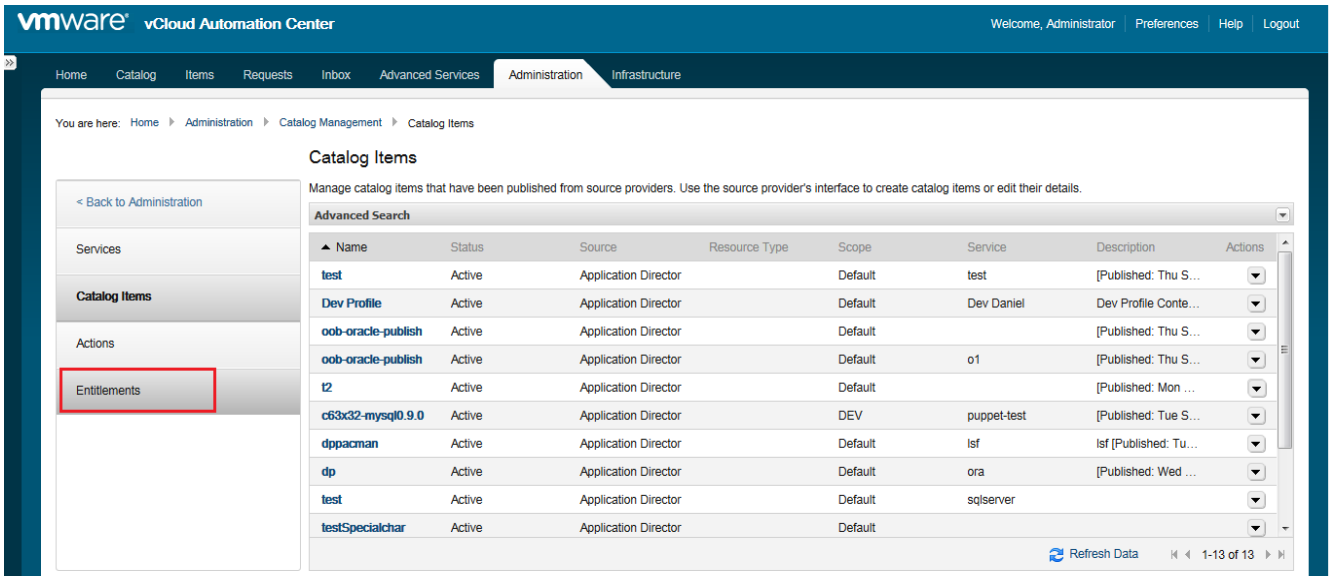
5. Select the published **SQL Server 1.0.0** application

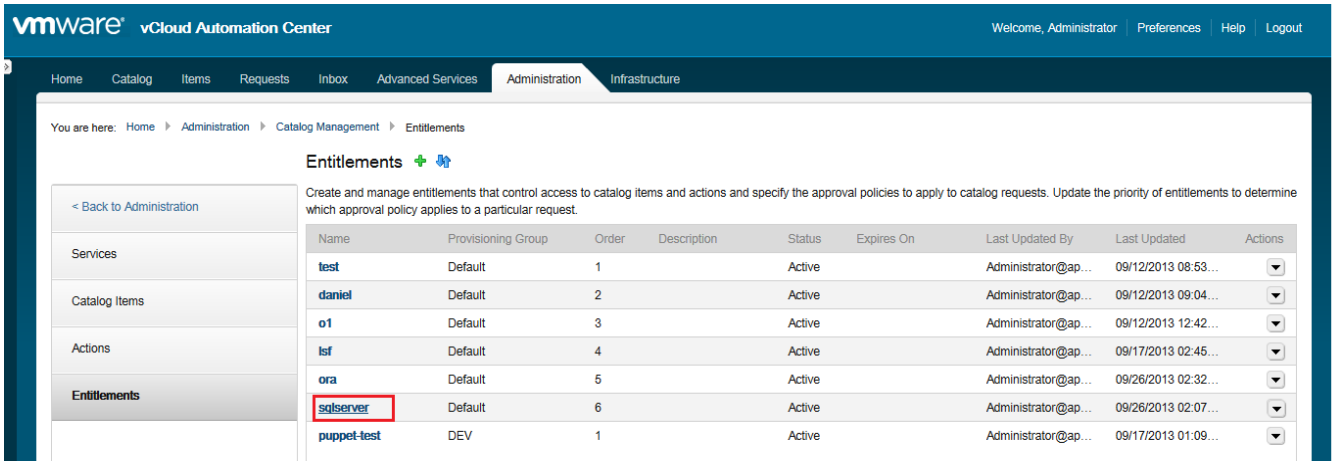

vmware vCloud Automation Center
Welcome, Administrator | Preferences | Help | Logout
Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure
You are here: Home ▸ Administration ▸ Catalog Management ▸ Catalog Items
Catalog Items
< Back to Administration
Services
Catalog Items
Actions
Entitlements
Manage catalog items that have been published from source providers. Use the source provider's interface to create catalog items or edit their details.
Advanced Search
oob-oracle-publish Active Application Director Default [Published: Thu S...
oob-oracle-publish Active Application Director Default o1 [Published: Thu S...
t2 Active Application Director Default [Published: Mon ...
c63x32-mysql0.9.0 Active Application Director DEV puppet-test [Published: Tue S...
dppacman Active Application Director Default lsf [Published: Tu...
dp Active Application Director Default ora [Published: Wed ...
test Active Application Director Default sqlserver
testSpecialchar Active Application Director Default
db_trigering Active Application Director Default sqlserver db_trigering
testdb_oracle_j Active Application Director Default ora
SQL Server 1.0.0 Active Application Director Default SQL Server 1.0.0
Refresh Data
1-13 of 13

6. From the **Service** drop-down, select **sqlserver** to assign this Catalog Item to the sqlserver Service Category. Finally click **Update**

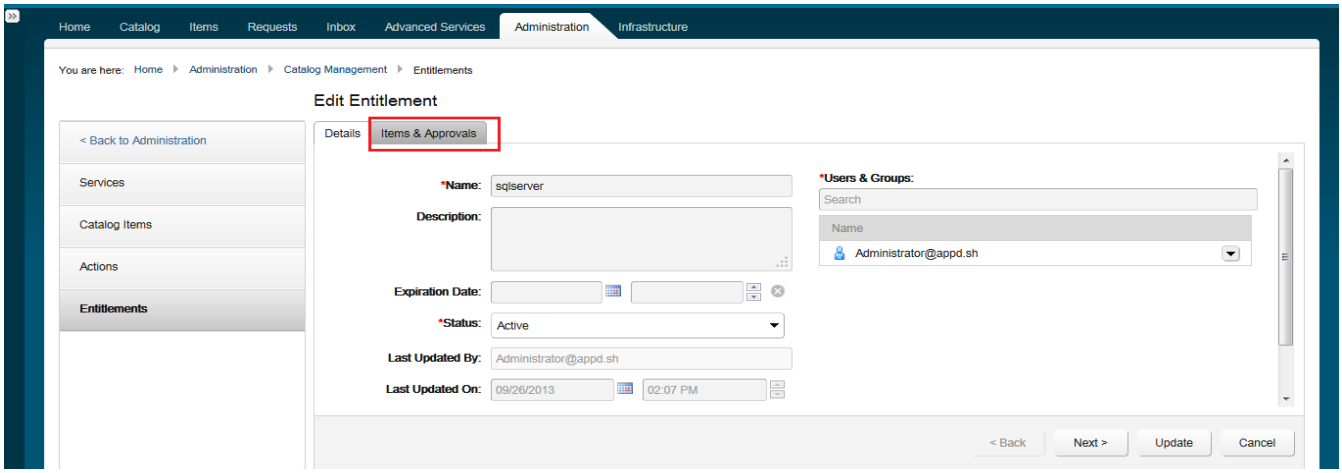


7. Click on **Entitlements** and select the “sqlserver” Provisioning Group

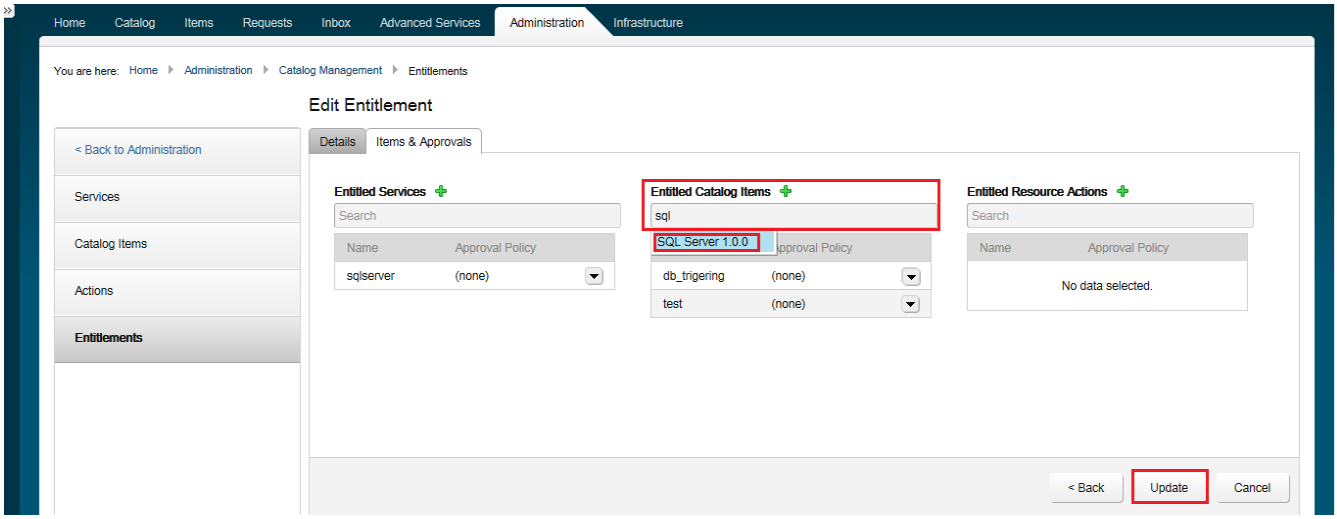

vmware vCloud Automation Center
Welcome, Administrator | Preferences | Help | Logout
Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure
You are here: Home ▸ Administration ▸ Catalog Management ▸ Catalog Items
Catalog Items
< Back to Administration
Services
Catalog Items
Actions
Entitlements
Manage catalog items that have been published from source providers. Use the source provider's interface to create catalog items or edit their details.
Advanced Search
Name Status Source Resource Type Scope Service Description Actions
test Active Application Director Default test [Published: Thu S…
Dev Profile Active Application Director Default Dev Daniel Dev Profile Conte…
oob-oracle-publish Active Application Director Default [Published: Thu S…
oob-oracle-publish Active Application Director Default o1 [Published: Thu S…
t2 Active Application Director Default [Published: Mon …
c63x32-mysql0.9.0 Active Application Director DEV puppet-test [Published: Tue S…
dppacman Active Application Director Default lsf [Published: Tu…
dp Active Application Director Default ora [Published: Wed …
test Active Application Director Default sqlserver
testSpecialchar Active Application Director Default
Refresh Data
1-13 of 13


vmware vCloud Automation Center
Welcome, Administrator | Preferences | Help | Logout
Home Catalog Items Requests Inbox Advanced Services Administration Infrastructure
You are here: Home ▸ Administration ▸ Catalog Management ▸ Entitlements
Entitlements
< Back to Administration
Services
Catalog Items
Actions
Entitlements
Create and manage entitlements that control access to catalog items and actions and specify the approval policies to apply to catalog requests. Update the priority of entitlements to determine which approval policy applies to a particular request.
Name Provisioning Group Order Description Status Expires On Last Updated By Last Updated Actions
test Default 1 Active Administrator@ap… 09/12/2013 08:53…
daniel Default 2 Active Administrator@ap… 09/12/2013 09:04…
o1 Default 3 Active Administrator@ap… 09/12/2013 12:42…
lsf Default 4 Active Administrator@ap… 09/17/2013 02:45…
ora Default 5 Active Administrator@ap… 09/26/2013 02:32…
sqlserver Default 6 Active Administrator@ap… 09/26/2013 02:07…
puppet-test DEV 1 Active Administrator@ap… 09/17/2013 01:09…

8. Click on the **Items & Approvals** tab. Ensure that Applications are listed under Entitled Services

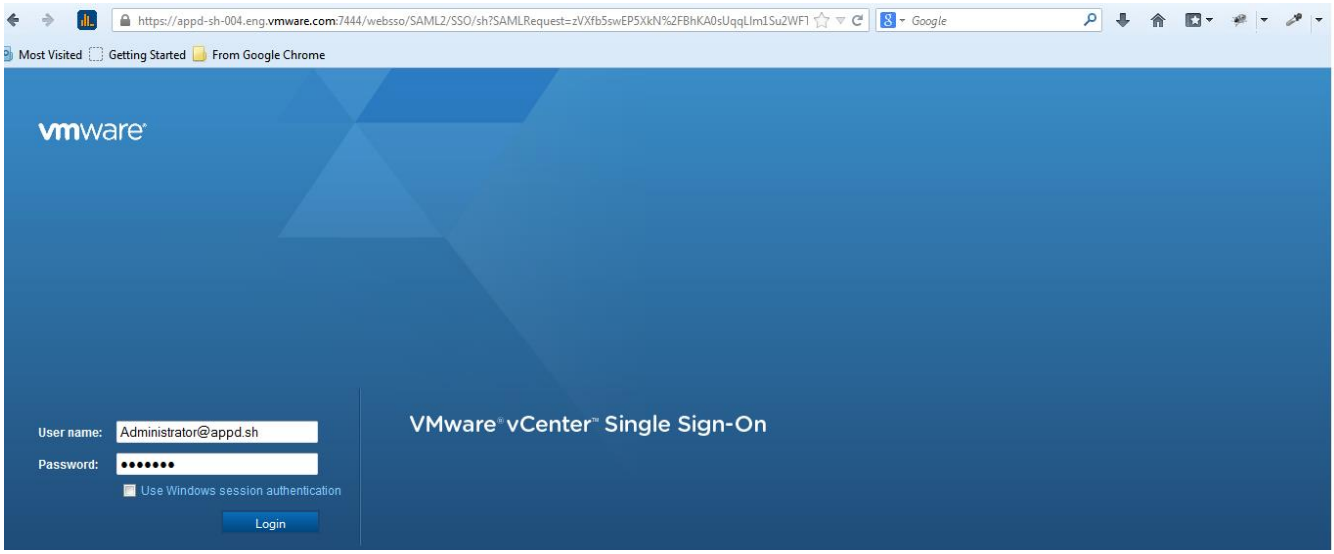


9. Search for the published SQL Server 1.0.0 application under **Entitled Catalog Items** and click **Update** to save these changes

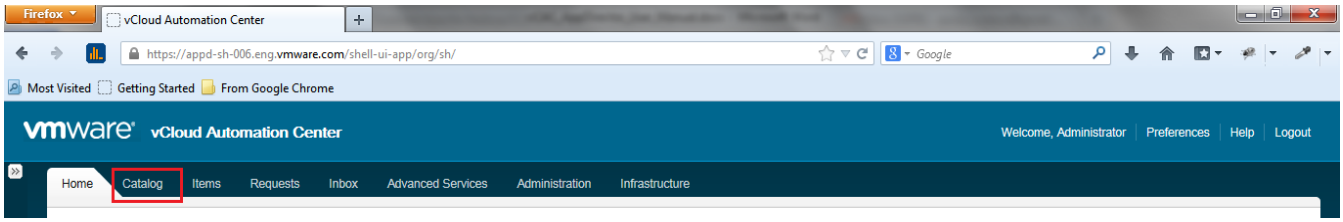


3.4 Request the Application as a Catalog Consumer

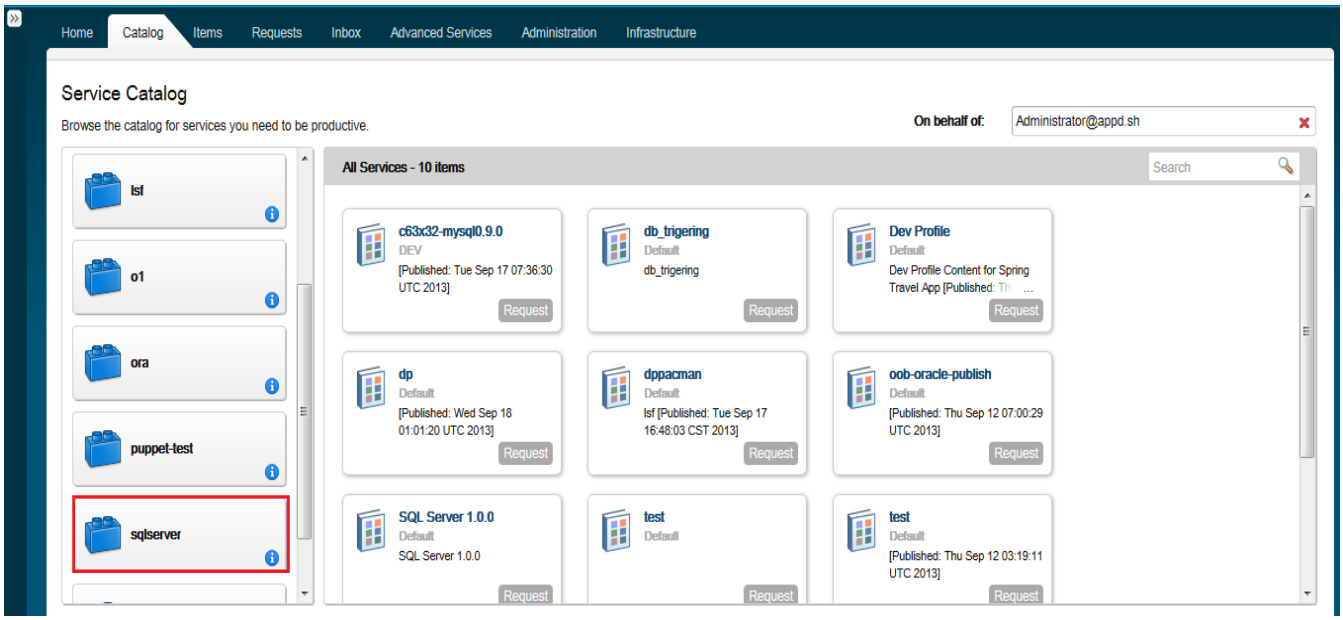
1. Log into vCAC Service Catalog using SSO as a Catalog Consumer



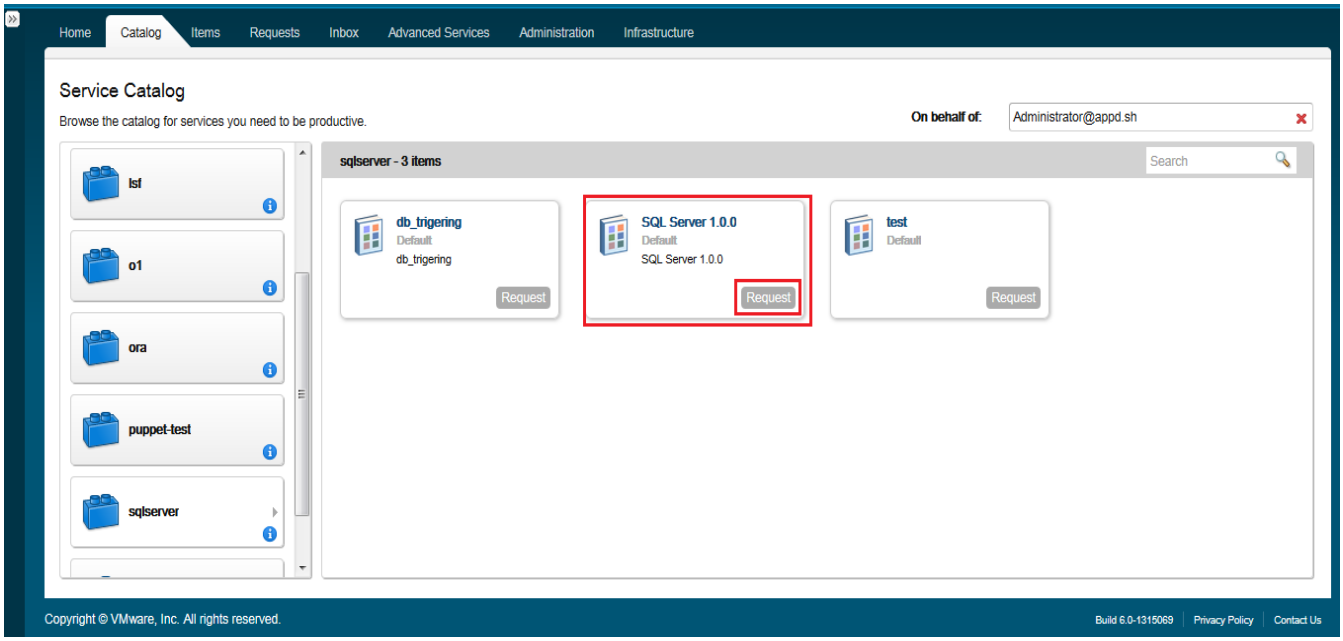
2. Click on the **Catalog** tab



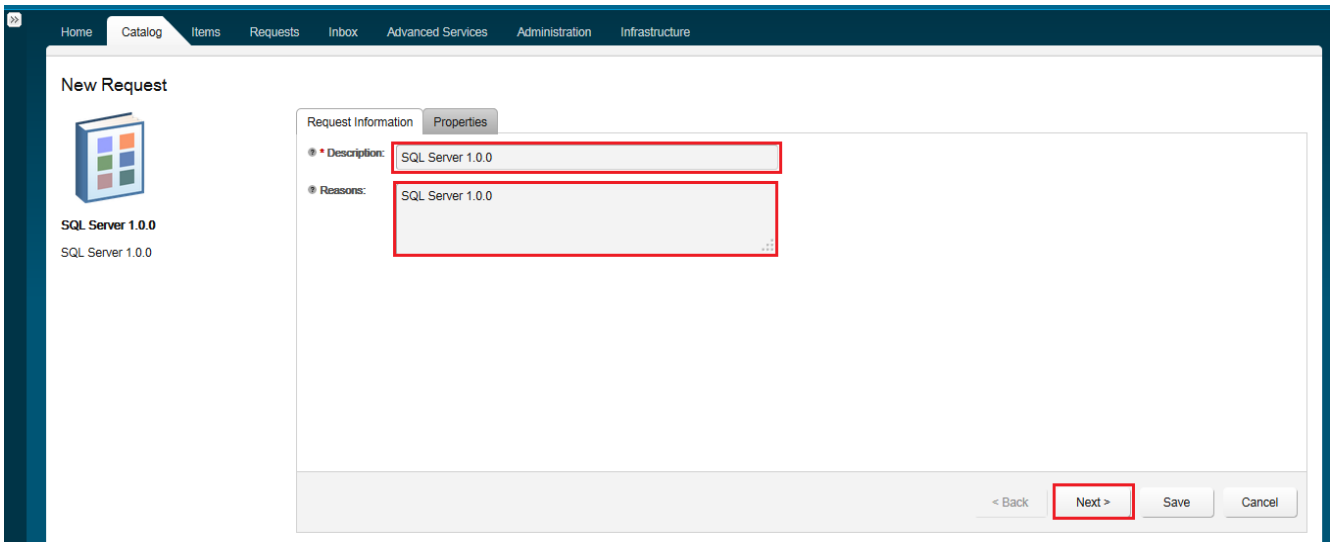
3. Select SQL Server



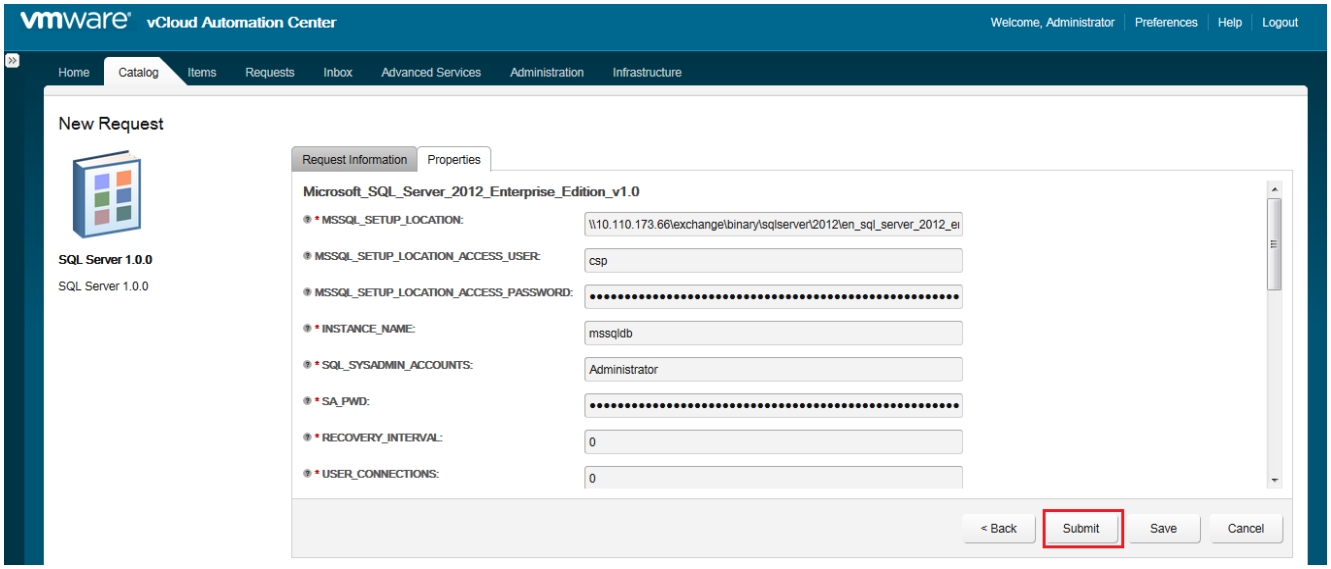
4. Click on the **Request** Button for published SQL Server 1.0.0 application

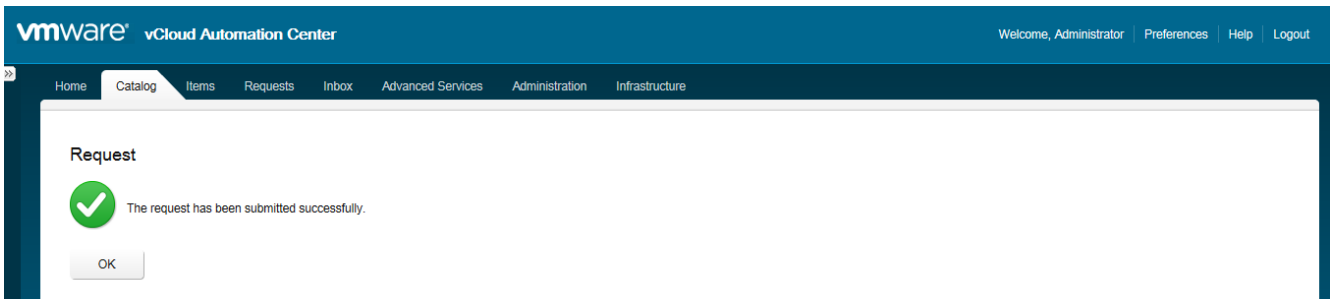


5. Provide Description & Details and click **Next**.



6. Review all the application **properties**. Click **Submit** to provision this application.





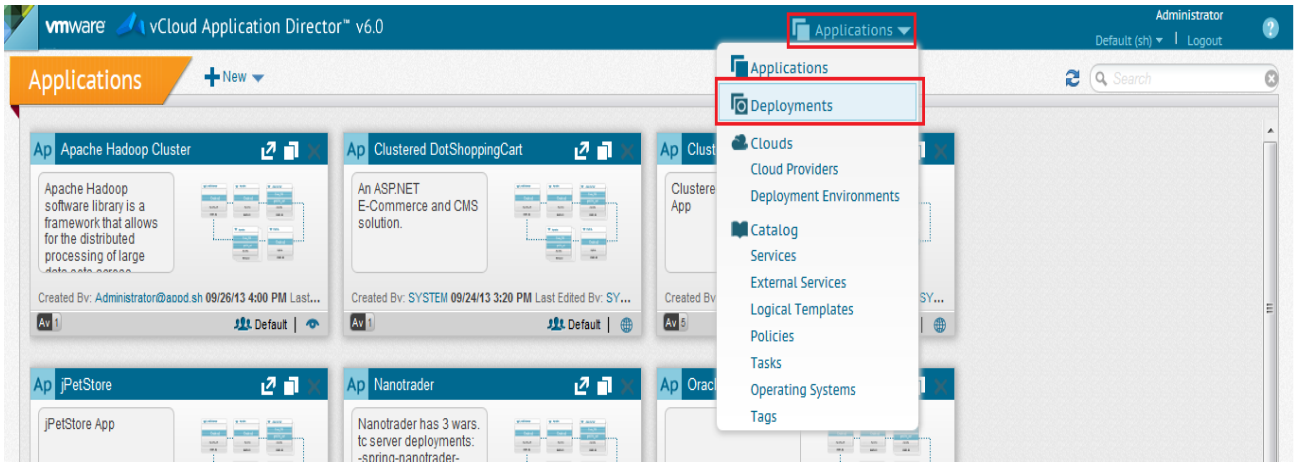
3.5 View the status of the application deployment

After completion of the deployment, we can check the status by following two methods

Method -1: From Application Director

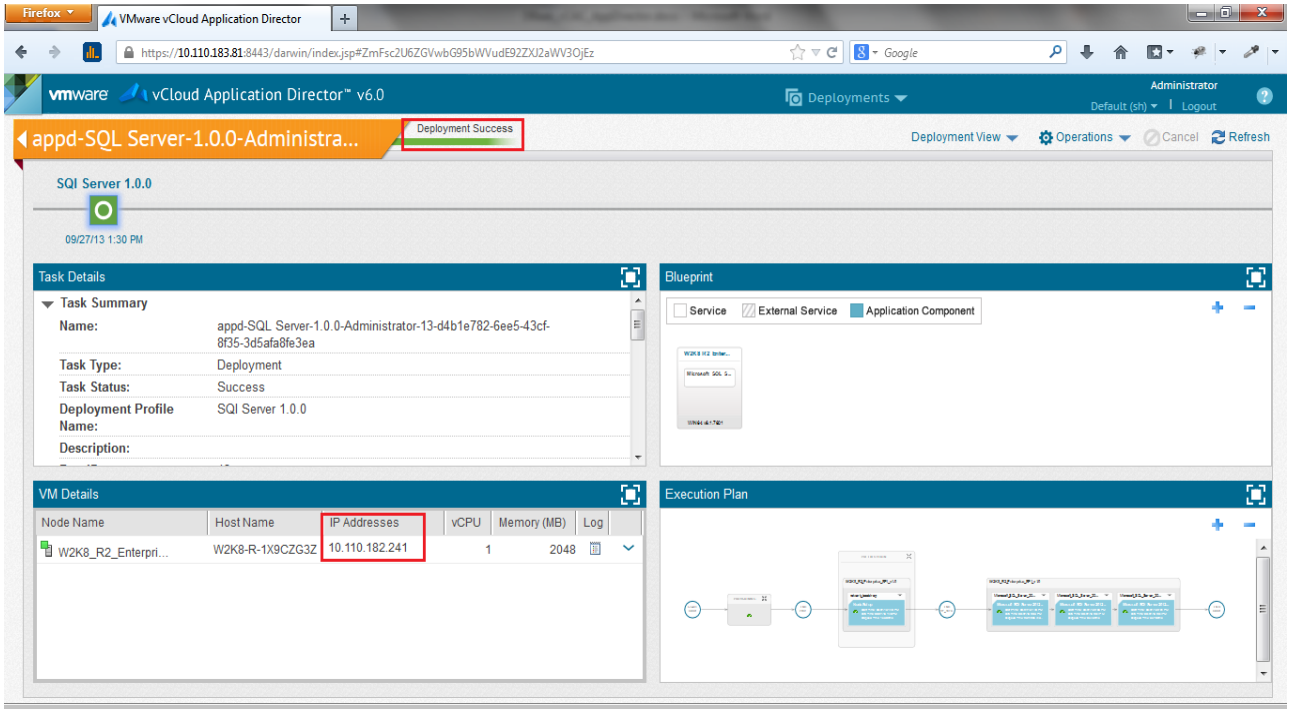
1. Login to the Application Director v6.0 instance

2. Review the deployment status from the Deployments page by selecting **Deployments** from the main menu.



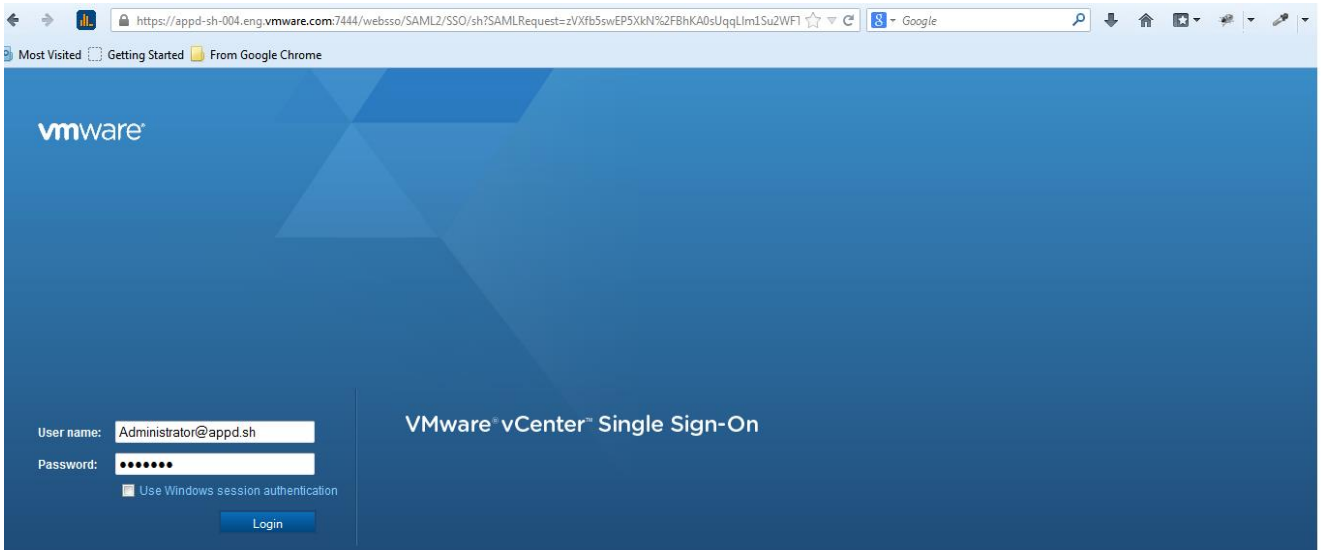
3. Hover mouse on the below box to see where this deployment is initiated from. Click on this deployment

4. Check the success/failure of the deployment

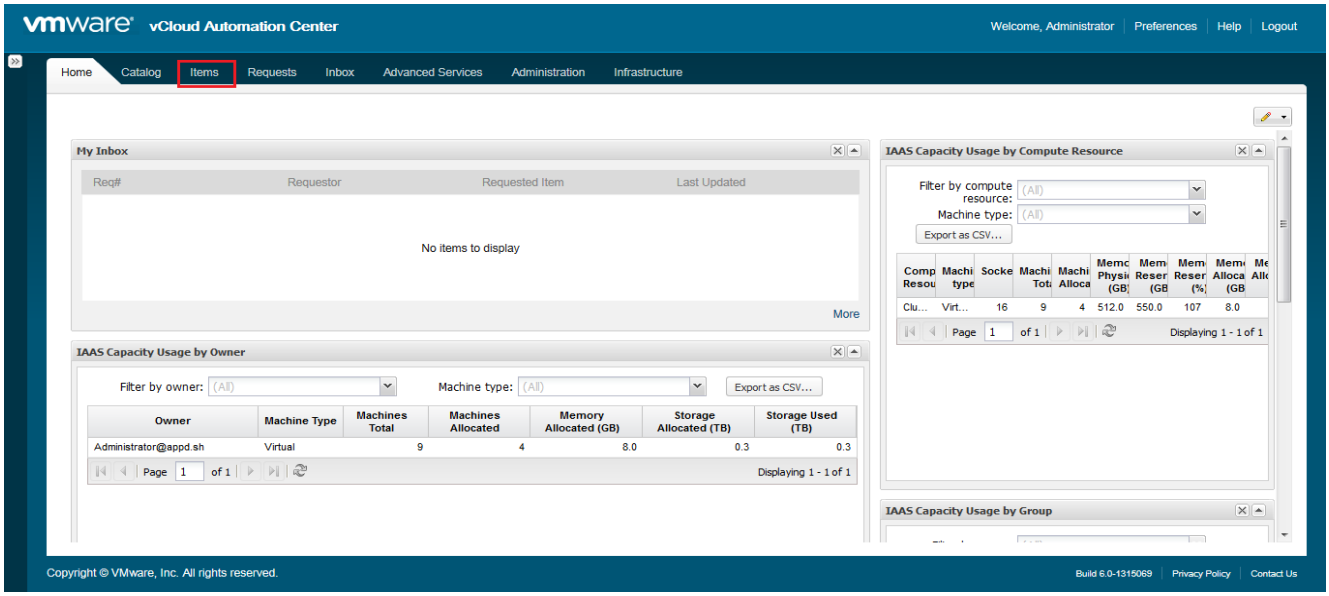


Method -2: From vCAC

1. Log into vCAC Service Catalog using SSO as a Catalog Consumer



2. Click on the **Items** tab


vmware vCloud Automation Center
Welcome, Administrator | Preferences | Help | Logout
Home | Catalog | Items | Requests | Inbox | Advanced Services | Administration | Infrastructure
My Inbox
Req# | Requestor | Requested Item | Last Updated
No items to display
More
IAAS Capacity Usage by Compute Resource
Filter by compute resource: (All)
Machine type: (All)
Export as CSV...
Page 1 of 1
Displaying 1 - 1 of 1
IAAS Capacity Usage by Owner
Filter by owner: (All)
Machine type: (All)
Export as CSV...
Owner | Machine Type | Machines Total | Machines Allocated | Memory Allocated (GB) | Storage Allocated (TB) | Storage Used (TB)
Administrator@appd.sh | Virtual | 9 | 4 | 8.0 | 0.3 | 0.3
Page 1 of 1
Displaying 1 - 1 of 1
IAAS Capacity Usage by Group
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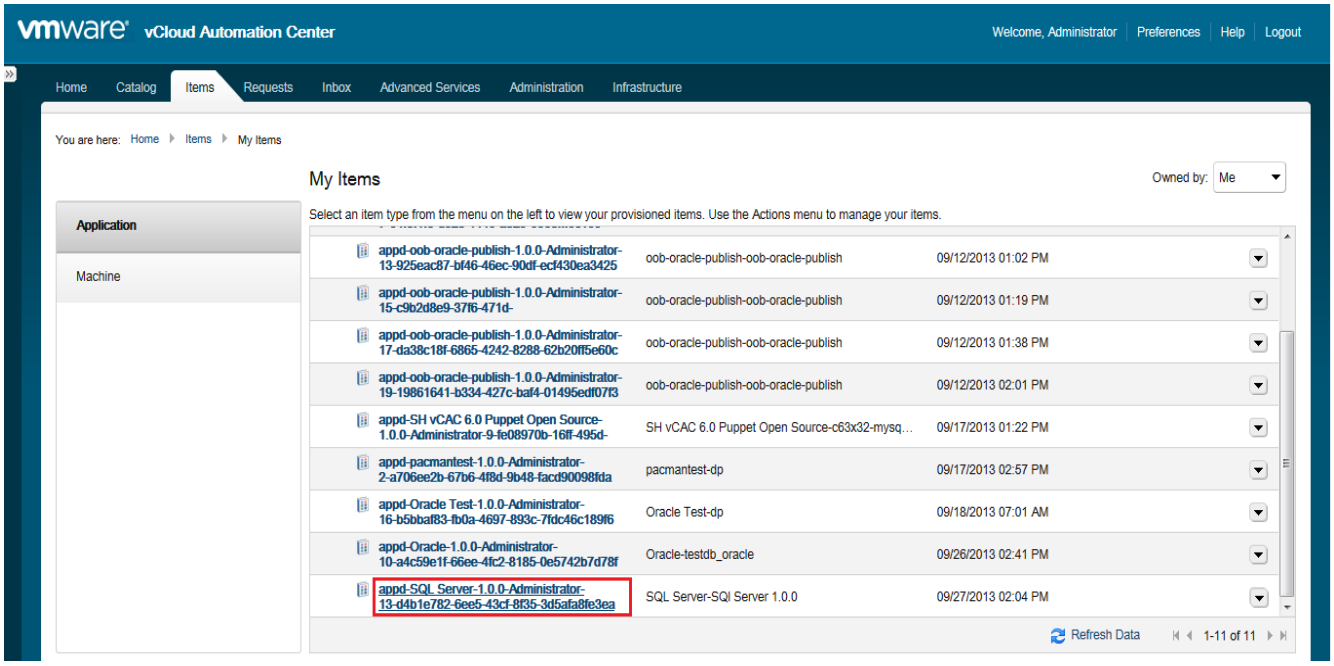
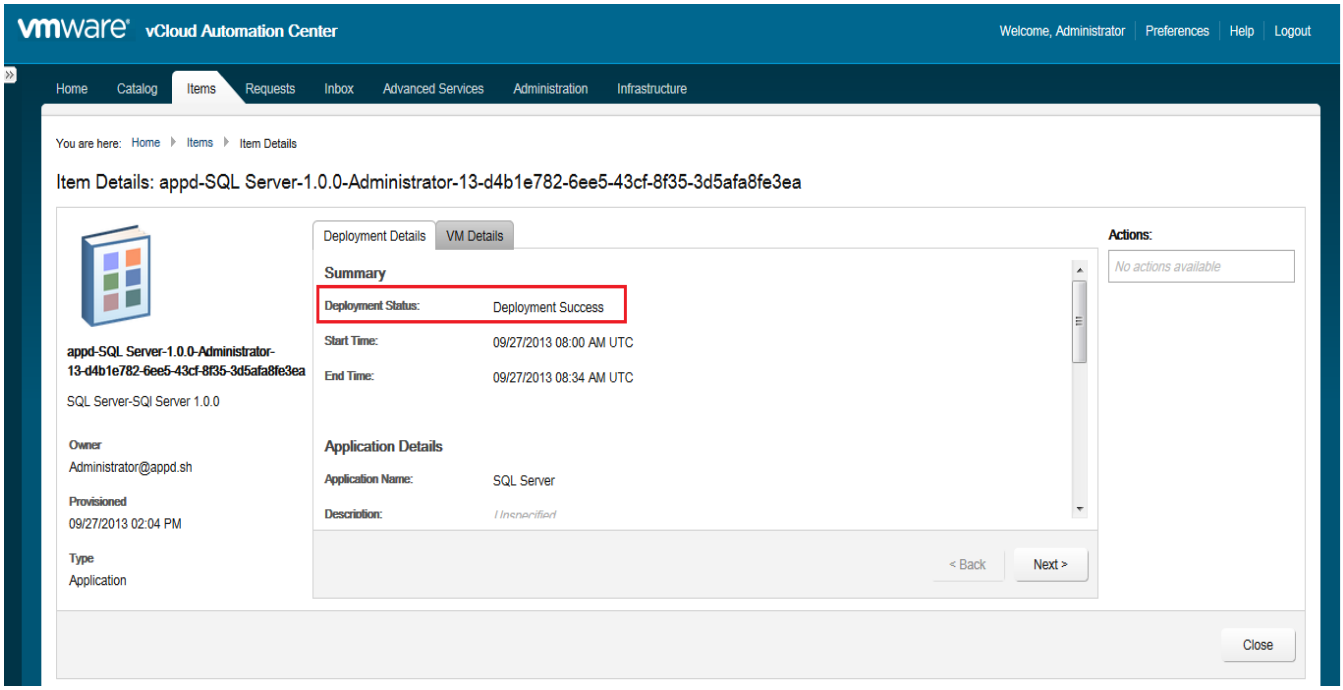
Build 6.0-1315069 | Privacy Policy | Contact Us

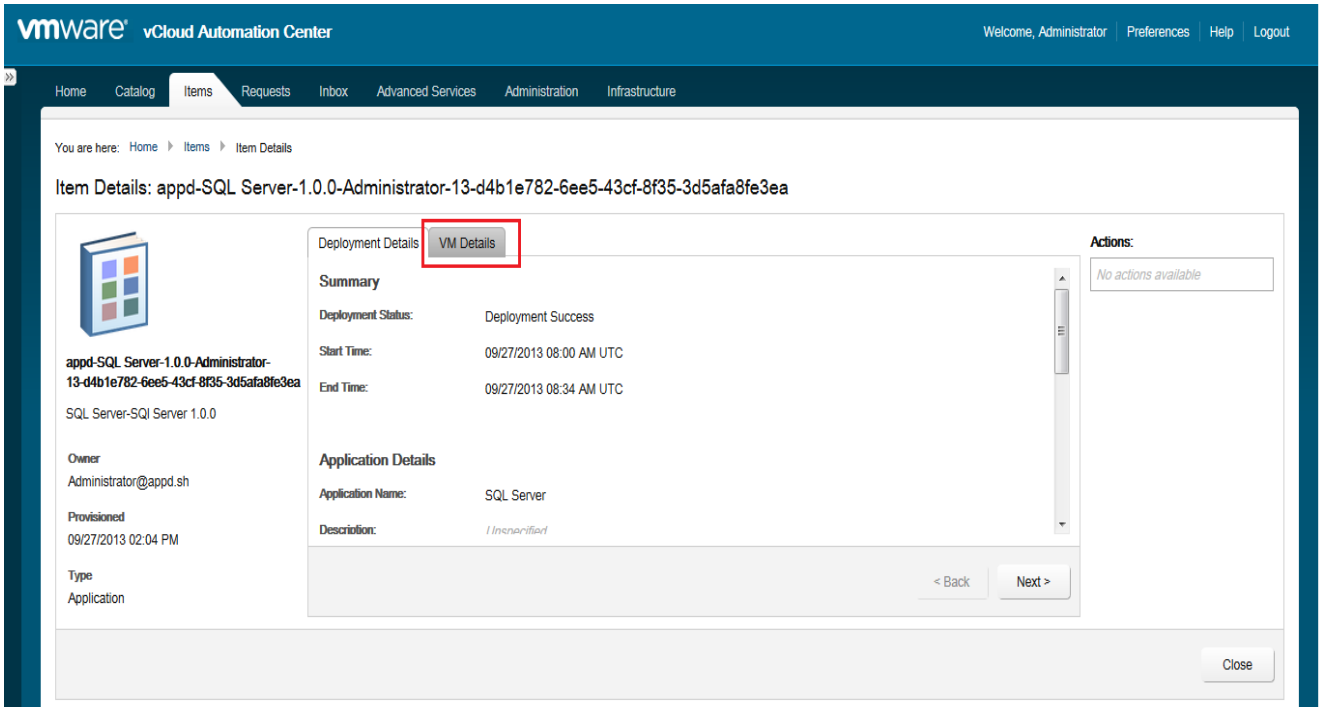
3. Select **the appd-SQL_Server** item

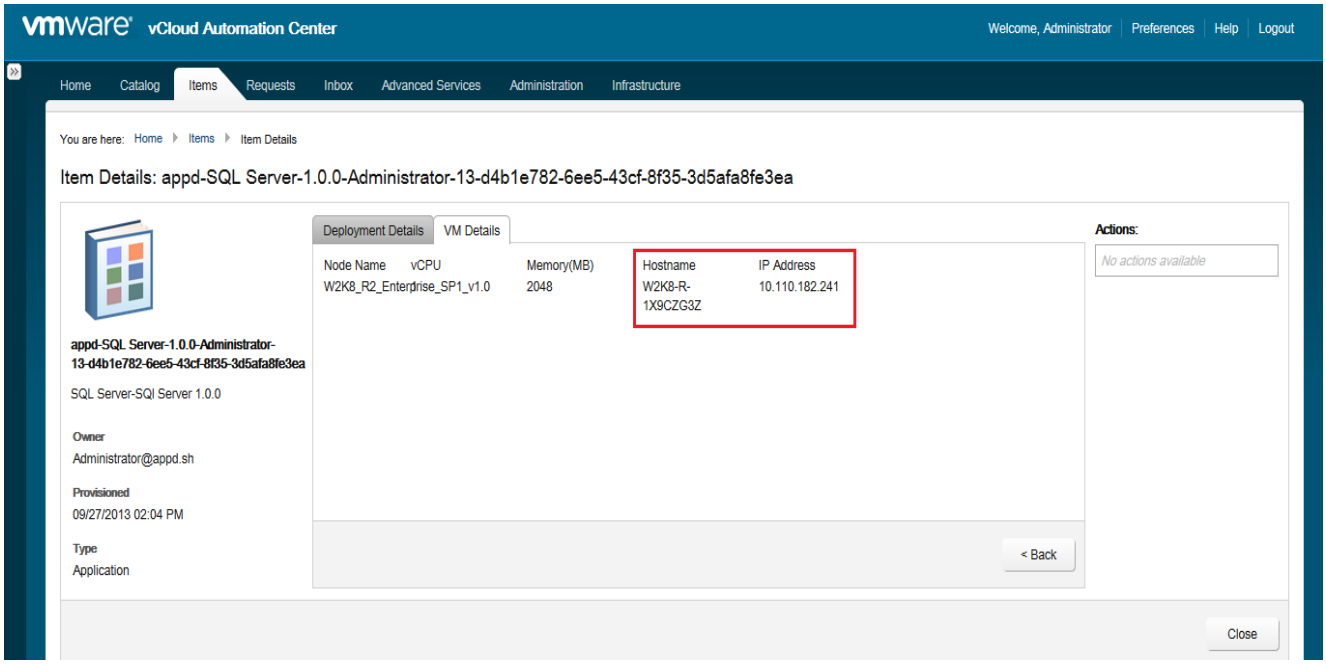

vmware vCloud Automation Center
Welcome, Administrator | Preferences | Help | Logout
Home | Catalog | Items | Requests | Inbox | Advanced Services | Administration | Infrastructure
You are here: Home ▸ Items ▸ My Items
My Items
Owned by: Me
Application
Machine
Select an item type from the menu on the left to view your provisioned items. Use the Actions menu to manage your items.
appd-oob-oracle-publish-1.0.0-Administrator-13-925eac87-bf46-46ec-90df-ecf430ea3425 | oob-oracle-publish-oob-oracle-publish | 09/12/2013 01:02 PM
appd-oob-oracle-publish-1.0.0-Administrator-15-c9b2d8e9-37f6-471d- | oob-oracle-publish-oob-oracle-publish | 09/12/2013 01:19 PM
appd-oob-oracle-publish-1.0.0-Administrator-17-da38c18f-6865-4242-8288-62b20ff5e60c | oob-oracle-publish-oob-oracle-publish | 09/12/2013 01:38 PM
appd-oob-oracle-publish-1.0.0-Administrator-19-19861641-b334-427c-baf4-01495edf07f3 | oob-oracle-publish-oob-oracle-publish | 09/12/2013 02:01 PM
appd-SH vCAC 6.0 Puppet Open Source-1.0.0-Administrator-9-fe08970b-16ff-495d- | SH vCAC 6.0 Puppet Open Source-c63x32-mysq... | 09/17/2013 01:22 PM
appd-pacmantest-1.0.0-Administrator-2-a706ee2b-67b6-4f8d-9b48-facd90098fda | pacmantest-dp | 09/17/2013 02:57 PM
appd-Oracle Test-1.0.0-Administrator-16-b5bbaf83-fb0a-4697-893c-7fdc46c189f6 | Oracle Test-dp | 09/18/2013 07:01 AM
appd-Oracle-1.0.0-Administrator-10-a4c59e1f-66ee-4fc2-8185-0e5742b7d78f | Oracle-testdb_oracle | 09/26/2013 02:41 PM
appd-SQL Server-1.0.0-Administrator-13-d4b1e782-6ee5-43cf-8f35-3d5afa8fe3ea | SQL Server-SQl Server 1.0.0 | 09/27/2013 02:04 PM
Refresh Data
1-11 of 11

4. Check the success/failure of the deployment.



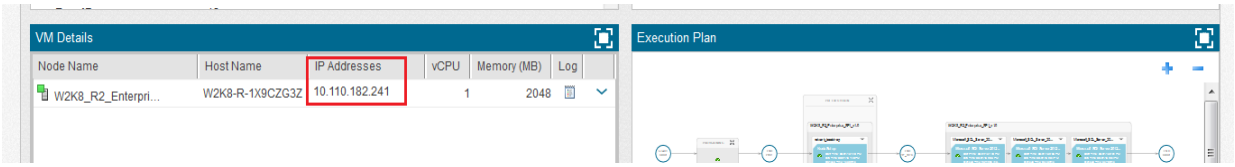
5. Check the machine IP by clicking on the **VM Details** tab.



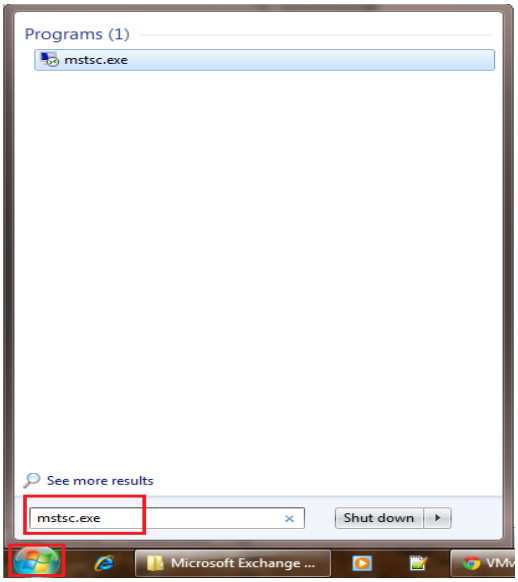


3.6 Launching the Application

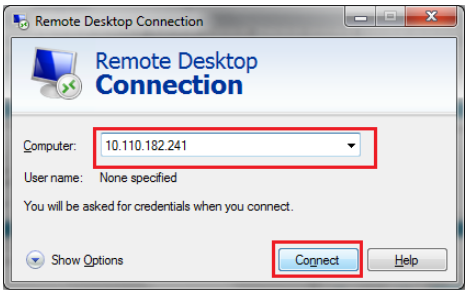
1. Click on the **VM Details** Page to get the IPs of the machines. We will need these IPs to launch the application



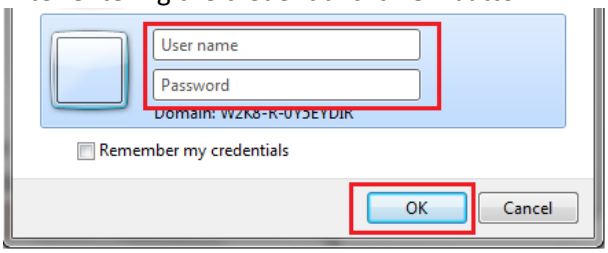
2. RDP into the created machine "10.110.182.241" as Start Menu -> Type mstsc.exe in the "*Search programs and files"* text box. Press ENTER key



3. Now type machine's IP in the **Computer** Filed and click **Connect**

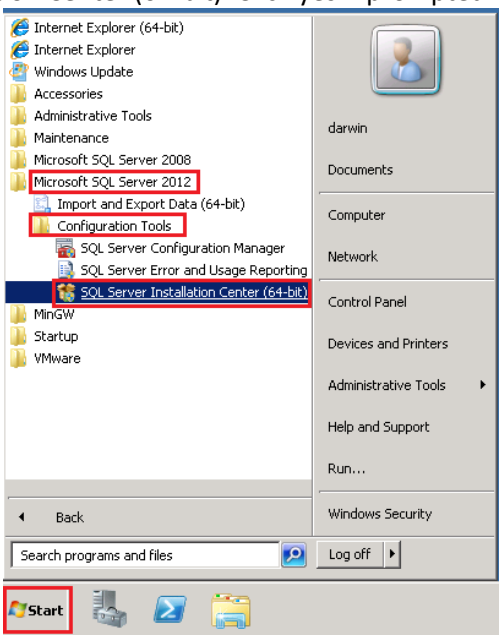


4. Now enter the system account credential
   After entering the credential click OK button

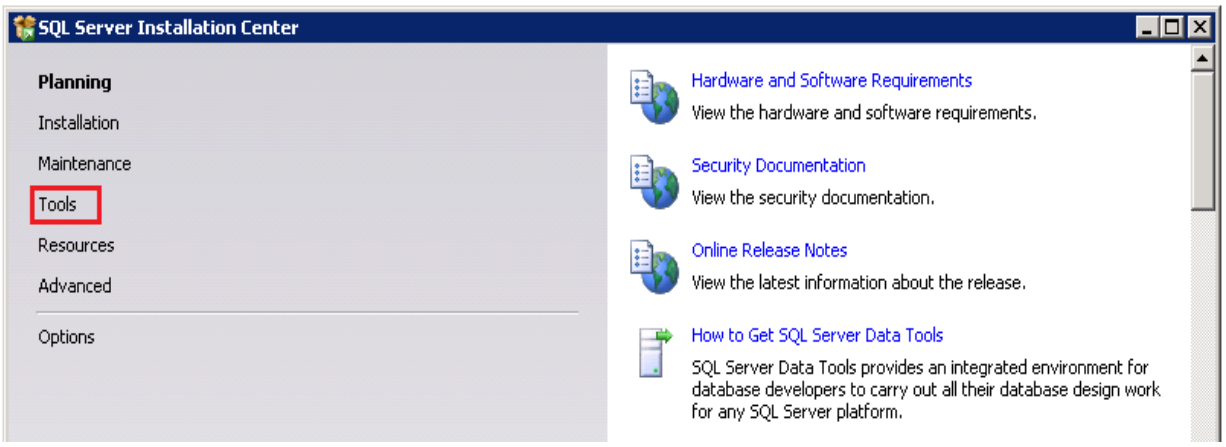


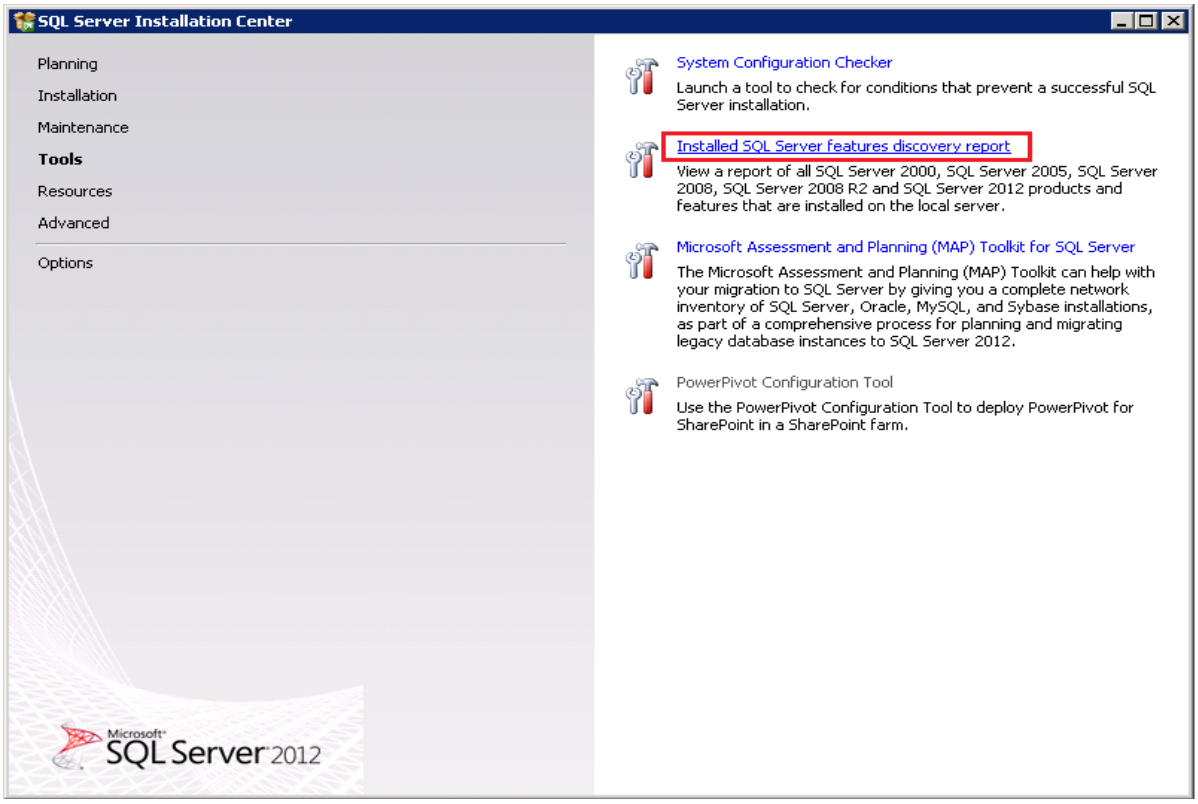
5. Now we are successfully logged into the machine

6. Click on Start Menu → All Programs → Microsoft SQL Server 2012 → Configuration Tools → SQL Server Installation Center (64-bit). Click yes if prompted.

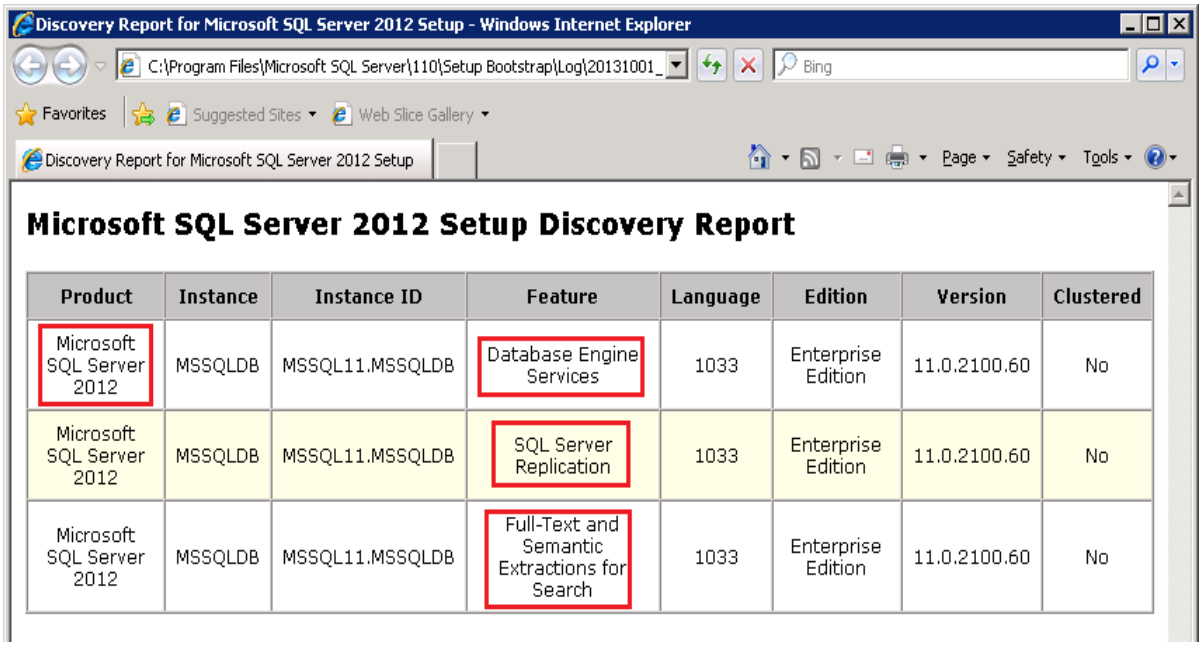


7. To run the SQL Server features discovery report, click **Tools** in the left-hand navigation area of **SQL Server Installation Center**, and then click **Installed SQL Server features discovery report**


SQL Server Installation Center
Planning
Installation
Maintenance
Tools
Resources
Advanced
Options
Hardware and Software Requirements
View the hardware and software requirements.
Security Documentation
View the security documentation.
Online Release Notes
View the latest information about the release.
How to Get SQL Server Data Tools
SQL Server Data Tools provides an integrated environment for database developers to carry out all their database design work for any SQL Server platform.


SQL Server Installation Center
Planning
Installation
Maintenance
Tools
Resources
Advanced
Options
System Configuration Checker
Launch a tool to check for conditions that prevent a successful SQL Server installation.
Installed SQL Server features discovery report
View a report of all SQL Server 2000, SQL Server 2005, SQL Server 2008, SQL Server 2008 R2 and SQL Server 2012 products and features that are installed on the local server.
Microsoft Assessment and Planning (MAP) Toolkit for SQL Server
The Microsoft Assessment and Planning (MAP) Toolkit can help with your migration to SQL Server by giving you a complete network inventory of SQL Server, Oracle, MySQL, and Sybase installations, as part of a comprehensive process for planning and migrating legacy database instances to SQL Server 2012.
PowerPivot Configuration Tool
Use the PowerPivot Configuration Tool to deploy PowerPivot for SharePoint in a SharePoint farm.
Microsoft SQL Server 2012

8. The SQL Server discovery report can be used to verify the version of SQL Server and the SQL Server features installed on the computer. The **Installed SQL Server features discovery report** displays a report of all SQL Server 2000, SQL Server 2005, SQL Server 2008, SQL Server 2008 R2 and SQL Server 2012 products and features that are installed on the local server



4. Summary

This solution provides automated installation and configuration for SQL Server 2012 service as a DB service and utilizes industry's leading Cloud-enabled self-service provisioning solution, VMware vCloud Automation Center 6.0

5. Benefits

DB as a Service can accelerate application development. DB as a Service provisions database resources automatically based on available system resources, allowing application developers, architects, testers, and other consumers of databases to store and retrieve data without having to deal with lower-level database administration functionality.

The key DB as a Service characteristics include:

- **Enables on-demand, self-service-based database provisioning.** DB as a Service allows database consumers such as application developers, testers, and architects to provision databases easily using an on-demand, self-service platform. It allows provisioning databases using an easy-to-use platform that even nontechnical users can securely leverage while being compliant with all corporate IT policies.
- **Delivers an elastic and multitenant database platform.** DB as a Service delivers an elastic database platform that can expand and contract its compute and storage resources dynamically based on resources available, repurposing them as required.
- **Leverages existing servers and storage.** Unlike other clustered platforms, DB as a Service everages existing servers and storage. It delivers an automated resource management across standalone, clustered, virtualized, and nonvirtualized servers and storage.
- **Supports common security and administration policies across databases.** DB as a Service leverages common policies that can be deployed across a farm of databases running a variety of operating systems and hardware platforms. The policies can enforce uniformity of frequent administration tasks across databases, ensuring compliance, consistency, and security — all at a lower cost.

- **Automates database administration and monitoring**. A key feature of DB as a Service is the ability to automate the administration and monitoring of databases such as backup, recovery, tuning, optimization, patching, upgrading, and creation. Based on the policies that are defined by Database Administrators, database administration tasks can be automated — scheduled or proactively initiated to support various database activities.
- **Meters database usage for chargeback.** DB as a Service platforms offer granular metering of database usage that can be used for chargeback to various consumers. They typically track based on time, space, table, availability, and resource usage and provide an aggregated view per department, group, or individual user.